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|---|-------------|----------------------|---------------------|------------------|
| APPLICATION NO.                           | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/803,898                                | 03/19/2004  | Graham J. Broad      | Q80038              | 6697             |
| 7590 09/27/2004                           |             |                      |                     |                  |
| SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC |             | EXAMINER             |                     |                  |
| 2100 Pennsylvania Avenue, N.W.            |             | TAKAOKA, DEAN O      |                     |                  |
| Washington, DC 20037-3213                 |             |                      |                     |                  |
|   |             | ART UNIT             | PAPER NUMBER        |                  |
|   |             | 2817                 |                     |                  |

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/803,898 | <b>Applicant(s)</b><br>BROAD ET AL. |  |
|                              | <b>Examiner</b><br>Dean O Takaoka    | <b>Art Unit</b><br>2817             |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-12 is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3-8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/19/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marie (US 2,999,988), prior art cited in the Applicant's IDS dated March 19, 2004 in view of Tyrrell (2,423,130).

Claim 1:

Marie (Fig. 9) shows a waveguide directional filter arrangement comprising an input waveguide means (1), an output waveguide (15) and an interconnected cascade assembly of two or more cavity resonators (39, 40, 41) where the input waveguide and output waveguide each include broad wall sections (width across the top and bottom wall) joined by narrow wall sections (height across each side wall) whose aspect ratio is greater than 2:1 (shown in Fig. 9), each waveguide coupled via an aperture (27, 28, 29) to an end cavity resonator of the cascade assembly but does not show where edges of each aperture include inwardly extending curved protrusions of approximately hemicycle shape.

Tyrrell (Fig. 3) shows a waveguide filter arrangement where edges of each aperture include inwardly extending curved protrusions of approximately hemicycle shape (12, 13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apertures disclosed by Marie with the apertures disclosed by Tyrrell. Such a modification would have realized the advantageous benefit of facilitating passage of high power through the resonant iris without corona discharge in the slot (Tyrrell – col. 5, lines 33-38) thus suggesting the obviousness of the modification.

Claim 2:

Where the approximately hemicycle shaped curved protrusions are integral with the aperture (where Tyrrell shows hemicycle edges defining irises 12 and 13 are intergral with plate 5).

#### ***Allowable Subject Matter***

Claims 9 – 12 are allowed.

Marie shows a directional filter including input and output waveguides where the input and output waveguides include broad wall and narrow wall sections but does not show an additional coupling element incorporating an external transmission line coupling one pair of non-adjacent resonators (claim 9).

Claims 3 – 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O Takaoka whose telephone number is (571) 272-1772. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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September 22, 2004